

DATA ITEM DESCRIPTION

SOFTWARE TEST PLAN (STP)		DID-FAA-026-12	
<p>3. DESCRIPTION/PURPOSE</p> <p>3.1 The Software Test Plan (STP) describes plans for qualification testing of Software Configuration Items (SCI's), software systems and software products. It describes the software test environment to be used for the testing, identifies the tests to be performed, and provides schedules for test activities.</p> <p>3.2 The Software Test Plan DID format will be tailored to the type of test and/or phase of testing required by contract (production acceptance, site acceptance, factory acceptance, software, system, etc.)</p>			
4. APPROVAL DATE (YYMMDD) August 11, 2000	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) AIO-2/ASU-500	6a. DTC APPLICABLE N/A	6b. GIDEP APPLICABLE N/A
<p>7. APPLICATION/INTERRELATIONSHIP</p> <p>7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by specific and discrete task requirements as delineated in the contract.</p> <p>7.2 This DID is used when the contractor is tasked to develop and record plans for conducting software test activities.</p> <p>7.3 The Contract Data Requirements List (CDRL) (DD Form 1423, or equivalent) should specify whether deliverable data are to be delivered on paper or electronic media; are to be in a given electronic form (such as ASCII, or compatible with a specified word processor or other support software); may be delivered in developer format rather than in the format specified herein; and may reside in a computer-aided software engineering (CASE) or other automated tool rather than in the form of a traditional document.</p>			
8. APPROVAL LIMITATION NONE	9a. REFERENCES FAA-STD-026	9b. AMSC NUMBER N/A	
<p>10. PREPARATION INSTRUCTIONS</p> <p>10.1 <u>General instructions.</u></p> <p>a. <u>Automated techniques.</u> Use of automated techniques is encouraged. The term "document" in this DID means a collection of data regardless of its medium.</p> <p>b. <u>Alternate presentation styles.</u> Diagrams, tables, matrices, and other presentation styles are acceptable substitutes for text when data required by this DID can be made more readable using these styles.</p> <p style="text-align: right;"><i>(Continued on Page 2)</i></p>			
<p>11. DISTRIBUTION STATEMENT</p> <p>DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.</p>			

PREPARATION INSTRUCTIONS: 10.1 General Instructions (continued)

c. Title page or identifier with signature blocks. The document shall include a title page containing, as applicable: document number; volume number; version/revision indicator; security markings or other restrictions on the handling of the document; date; document title; name, abbreviation, and any other identifier for the system, subsystem, or item to which the document applies; contract number; CDRL item number; organization for which the document has been prepared; name and address of the preparing organization; distribution statement; and signature blocks for the developer representative authorized to release the document, the acquirer representative authorized to approve the document, and the dates of release/approval. For data in a database or other alternative form, this information shall be included on external and internal labels or by equivalent identification methods.

d. Table of contents. The document shall contain a table of contents providing the number, title, and page number of each titled paragraph, figure, table, and appendix. For data in a database or other alternative form, this information shall consist of an internal or external table of contents containing pointers to, or instructions for accessing, each paragraph, figure, table, and appendix or their equivalents.

e. Page numbering/labeling. Each page shall contain a unique page number and display the document number, including version, volume, and date, as applicable. For data in a database or other alternative form, files, screens, or other entities shall be assigned names or numbers in such a way that desired data can be indexed and accessed.

f. Response to tailoring instructions. If a paragraph is tailored out of this DID, the resulting document shall contain the corresponding paragraph number and title, followed by "This paragraph has been tailored out." For data in a database or other alternative form, this representation need occur only in the table of contents or equivalent.

g. Multiple paragraphs and subparagraphs. Any section, paragraph, or subparagraph in this DID may be written as multiple paragraphs or subparagraphs to enhance readability.

h. Standard data descriptions. If a data description required by this DID has been published in a standard data element dictionary specified in the contract, reference to an entry in that dictionary is preferred over including the description itself.

i. Substitution of existing documents. Commercial or other existing documents may be substituted for all or part of the document if they contain the required data.

10.2 Content requirements. Content requirements begin here. The numbers shown designate the paragraph numbers to be used in the document. Each such number is understood to have the prefix "10.2" within this DID. For example, the paragraph numbered 1.1 is understood to be paragraph 10.2.1.1 within this DID.

1. Introduction. This section shall be divided into the following paragraphs.

1.1 Background. This paragraph shall briefly state the purpose of the system and the software products to which this document applies. It shall describe the general nature of the system and software products; summarize the history of system development.

1.2 Purpose. This paragraph defines the specific purpose of the plan for software. It shall describe the test environments, test identifications, and a general schedule for test activities for the respective phase.

1.3 Scope. This paragraph shall identify the segment of the test program the test plan will address.

2. Referenced documents. This section shall list the number, title, and date of all documents needed to implement the test program referenced in this plan. It shall include references to any policies and laws, which direct the test program. This section shall also identify the source for all documents not available through normal Government stocking activities.

3. System Description. This section shall describe the system to be tested. It contains the following paragraphs.

3.1 Software System Overview. This paragraph shall describe the software system to be tested and their major functions. It shall contain a block diagram of the system/software products and the hardware.

3.2 Software Interfaces Overview. This paragraph shall contain a simplified block diagram with a functional description of each interface. The paragraph includes facility interfaces, remote maintenance monitoring interface, voice communications interface, operator interface, and any interface required to validate the system specification requirements.

4. Test Program Management. This section shall include the following paragraphs.

4.1 Schedules. This paragraph shall include a test schedule which show the interdependencies of other program milestones. It will identify to the extent possible all tests to be performed in the phase.

4.2 Risk Management. This paragraph shall describe the process for test risk management, technical, cost, and schedule risk issues or any limitation which could result in incomplete resolutions of test requirements. This paragraph shall include planned work-a-rounds and resolutions.

PREPARATION INSTRUCTIONS: 10.2 Content Requirements (continued)

4.3 Test management Organization. This paragraph describes the structure and composition of the test organizations and personnel responsible for carrying out the testing. The following areas will be addressed.

4.4.1 Responsibilities and Authority. This paragraph will identify the organization responsible for the execution of the test phase. It also identifies other personnel who will conduct and support the testing. It shall list the position and describe the duties of each member of the test conduct team (i.e. test manager, observers, etc).

4.4.2 Other Participating Organizations. This paragraph describes the specific roles and responsibilities for organizations outside the immediate test conduct team and the specific roles they will have during the testing phase (ie. IPT)

4.5 Training. This paragraph shall describe the range and level of training and familiarization needed to develop test procedures and execute tests. This paragraph also describes any special knowledge needed by the test team (s) (e.g., familiarization with the test program and the test facility, orientation briefings, user instruction, the use of special test tools, etc).

4.6 Quality Control Measures. This section shall identify the specific configuration management process for the test phase. It identifies how changes to the baseline system will be controlled.

4.7 Environment/Infrastructure. This paragraph shall describe the process of ensuring that the infrastructure needed to manage the test program and perform the tests is maintained. Functionality, performance, safety, security, availability, space requirements, equipment, cost, and time constraints are items to be considered when monitoring test infrastructure.

5. Software test environment. This section shall be divided into the following paragraphs to describe the software test environment at each intended test site. Reference may be made to the Software Development Plan (SDP) for resources that are described there.

5.x (Name of test site(s)). This paragraph shall identify one or more test sites to be used for the testing, and shall be divided into the following subparagraphs to describe the software test environment at the site(s). If all tests will be conducted at a single site, this paragraph and its subparagraphs shall be presented only once. If multiple test sites use the same or similar software test environments, they may be discussed together. Duplicative information among test site descriptions may be reduced by referencing earlier descriptions.

5.x.1 Software items. This paragraph shall identify by name, number, and version, as applicable, the software items (e.g., operating systems, compilers, communications software, related applications software, databases, input files, code auditors, dynamic path analyzers, test drivers, preprocessors, test data generators, test control software, other special test software, post-processors) necessary to perform the planned testing activities at the test

PREPARATION INSTRUCTIONS: 10.2 Content Requirements (continued)

site(s). This paragraph shall describe the purpose of each item, describe its media (tape, disk, etc.), identify those that are expected to be supplied by the site, and identify any classified processing or other security or privacy issues associated with the software items.

5.x.2 Hardware and firmware items. This paragraph shall identify by name, number, and version, as applicable, the computer hardware, interfacing equipment, communications equipment, test data reduction equipment, apparatus such as extra peripherals (tape drives, printers, plotters), test message generators, test timing devices, test event records, etc., and firmware items that will be used in the software test environment at the test site(s). This paragraph shall describe the purpose of each item, state the period of usage and the number of each item needed, identify those that are expected to be supplied by the site, and identify any classified processing or other security or privacy issues associated with the items.

5.x.3 Other materials. This paragraph shall identify and describe any other materials needed for the testing at the test site(s). These materials may include manuals, software listings, media containing the software to be tested, media containing data to be used in the tests, sample listings of outputs, and other forms or instructions. This paragraph shall identify those items that are to be delivered to the site and those that are expected to be supplied by the site. The description shall include the type, layout, and quantity of the materials, as applicable. This paragraph shall identify any classified processing or other security or privacy issues associated with the items.

5.x.4 Proprietary nature, acquirer's rights, and licensing. This paragraph shall identify the proprietary nature, acquirer's rights, and licensing issues associated with each element of the software test environment.

5.x.5 Installation, testing, and control. This paragraph shall identify the developer's plans for performing each of the following, possibly in conjunction with personnel at the test site(s):

- a. Acquiring or developing each element of the software test environment
- b. Installing and testing each item of the software test environment prior to its use
- c. Controlling and maintaining each item of the software test environment

6. Test Program Description. This section contains the following paragraphs, which describe the planned test program and the tests to be conducted.

6.1 General Information. This paragraph shall be divided into subparagraphs to present general information applicable to the overall testing to be performed.

6.1.1 Test levels. This paragraph shall describe the levels at which testing will be performed, for example, CSCI level, or system level.

6.1.2 Test classes. This paragraph shall describe the types or classes of tests that will be performed (for example, timing tests, erroneous input tests, maximum capacity tests).

PREPARATION INSTRUCTIONS: 10.2 Content Requirements (continued)

6.1.3 General test conditions. This paragraph shall describe conditions that apply to all of the tests or to a group of tests. For example: "Each test shall include nominal, maximum, and minimum values;" "each test of type x shall use live data;" "execution size and time shall be measured for each CSCI." Included shall be a statement of the extent of testing to be performed and rationale for the extent selected. Also included shall be the approach to be followed for retesting/regression testing.

6.1.4 Test progression. In cases of progressive or cumulative tests, this paragraph shall explain the planned sequence or progression of tests.

6.1.5 Data recording, reduction, and analysis. This paragraph shall identify and describe the data recording, reduction, and analysis procedures to be used during and after the tests identified in this STP.

These procedures shall include, as applicable, manual, automatic, and semi-automatic techniques for recording test results, manipulating the raw results into a form suitable for evaluation, and retaining the results of data reduction and analysis.

6.1.6 Discrepancy Reporting and Corrective Actions. This paragraph shall describe the Discrepancy reporting and Corrective Action program that supports the test program. The Discrepancy Reporting and Corrective Action forms and instructions for completing those forms are included in this section.

6.5.2 Planned tests. This paragraph shall list each test to be conducted during this test phase. The test descriptions for the tests listed are attached as Appendix A of this plan. The following information shall be supplied in each test description:

- a. **Test Title**. Specify the title of the test/evaluation and a number designation
- b. **Test or Evaluation Objective**: List the objectives/requirements the test will validate and the test success criteria
- c. **Test or Evaluation Approach**: State the methods used to meet the test objective
- d. **Test Level**: State the software level to which the test will be executed.
- e. **Execution Time**: Estimate the total time it will take to execute the test(s) described, including multiple runs of a test procedure
- f. **Location**: Identify the testing location
- g. **Tasks/Activities**: List tasks and activities that will occur during the test
- h. **Personnel**: Identify the number and type of personnel required to accomplish the test.
- i. **Test Equipment**: Identify all test equipment (hardware and software) required to accomplish the test. Define any analysis tools that will be used to support the test.
- j. **Data Reduction/Analysis**: describe the test data reduction method, in relation to the Test equipment identified in item h that will support the test.
- k. **General Test Conditions**: Describe any special test conditions, test scenarios, or special operating conditions required to accomplish the test.

PREPARATION INSTRUCTIONS: 10.2 Content Requirements (continued)

7. Requirements traceability. This paragraph shall contain:

- a. Traceability from each test identified in this plan to the CSCI requirements and, if applicable, software system requirements it addresses. :
- b. Traceability from each SCI requirement and, if applicable, each software system requirement covered by this test plan to the test(s) that address it. The traceability shall cover the SCI requirements in all applicable Software Requirements Specifications (SRSs) and associated Interface Requirements Specifications (IRSs), and, for software systems, the system requirements in all applicable System/ Subsystem Specifications (SSSs) and associated system-level IRSs.

NOTE: This method is referred to as tracing requirements both forward and back .

8. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, rationale). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

A. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided. Appendixes may be bound as separate documents for ease in handling. Appendixes shall be lettered alphabetically (A, B, etc.).